Abstract Submitted
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Gamma-Ray Emission Spectra as a Constraint on Calculations of ^{234,236,238}U Neutron-Capture Cross Sections[1] J.L. ULLMANN, Los Alamos National Laboratory, M. KRTICKA, Charles University, Prague, T. KAWANO, T.A. BREDEWEG, B. BARAMSAI, A. COUTURE, R.C. HAIGHT, M. JANDEL, S. MOSBY, J.M. O'DONNELL, R.S. RUNDBERG, D.J. VIEIRA, J.B. WILHELMY, Los Alamos National Laboratory, J.A. BECKER, C.Y. WU, Lawrence Livermore National Laboratory, A. CHYZH, North Carolina State University — Calculations of the neutron-capture cross section at low neutron energies (10 eV through 100's of keV) are very sensitive to the nuclear level density and radiative strength function. These quantities are often poorly known, especially for radioactive targets, and actual measurements of the capture cross section are usually required. An additional constraint on the calculation of the capture cross section is provided by measurements of the cascade gamma spectrum following neutron capture. Recent measurements of ^{234,236,238}U(n,γ) emission spectra made using the DANCE 4π BaF_2 array at the Los Alamos Neutron Science Center will be presented. Calculations of gamma-ray spectra made using the DICEBOX code and of the capture cross section made using the CoH_3 code will also be presented. These techniques may be also useful for calculations of more unstable nuclides.

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